# KEWEENAW BAY INDIAN COMMUNITY

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February 22, 2010

Michigan Department of Natural Resources and Environment
Land and Water Management Div.
P.O. Box 30204
Lansing, MI 48909

**Re: Woodland Road Application File: 09-52-0086-P Comments Of The Keweenaw Bay Indian Community On the Proposed Issuance of Permits To Woodland Road LLC For Construction and Operation of a Mining Haul Road With Other Minor Uses**

via US Mail and email: DEQ-LWM-PCU@michigan.gov

Dear Mr. Gustafson

The Keweenaw Bay Indian Community (Community) submits the attached comments regarding the joint application to the Michigan Department of Natural Resources and Environment (MDNR&E) and the US Army Corps of Engineers (USACE) by Woodland Road LLC. This application seeks permits for construction and operation of a proposed 23 mile haul road with other minor uses between the Eagle Mine and the Humboldt Mill, Marquette County, Michigan.

The regulatory statutes under which this permit is proposed to be issued by the MDNR&E are:

- Part 303 Wetlands Protection (Section 404 of the Clean Water Act),
- Part 301 Inland Lakes and Streams, and
- Part 31 Water Resource Protection

The Community is a federally recognized Indian tribe that, along with its members, retained in the 1842 Treaty with the Chippewa their inherent right to hunt, fish, trap and gather in, on and over the lands and waters that were ceded to the United States under the Treaty. The proposed Woodland Road is within this ceded territory.

Large scale threats to the land and natural environment within the ceded territory are of great concern to the Community. The Community asserts that Woodland Road will result in substantial and irreversible adverse impacts to the watersheds that Woodland Road will cross and that the applicant has failed to show, as required by the laws of Michigan, that construction and operation of the Woodland Road "...will not pollute, impair or destroy the air, water or other natural resources or the public trust in those resources...".

The proposed Woodland Road would cause unacceptable destruction and degradation to aquatic and terrestrial ecosystems, pollute and degrade the waters of the Yellow Dog Plains, Michigamme Highlands and the Mulligan Plains, would negatively impact treaty reserved rights of the Keweenaw Bay Indian Community and a permit should be denied.

In support of the foregoing, the Community hereby submits the attached comments on the proposed Woodland Road permit. Please be advised that the Community reserves the right to supplement the enclosed comments.

Respectfully submitted,

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Enclosure:

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The Keweenaw Bay Indian Community offers the following comments on Permit Application File Number 09-52-0086-P to the Michigan Department of Natural Resources and Environment. Our comments are provided for relevant sections of Michigan's Part 303 and Part 301 of the Natural Resource and Environmental Protection Act.

**General Comments**

The proposed Woodland Road would cause unacceptable destruction and degradation to aquatic and terrestrial ecosystems, pollute and degrade the waters of the Yellow Dog Plains, Michigamme Highlands and the Mulligan Plains, would negatively impact treaty reserved rights of the Keweenaw Bay Indian Community, and should be denied.

**Part 303 State Wetland Permit Requirements**

**Section 324.30302 Legislative findings recognize that (a) Wetland conservation is a matter of state concern since a wetland of 1 county may be affected by acts on a river, lake, stream, or wetland of other counties, and further recognize that (b) Loss of a wetland may deprive people of the state of some or all of the following benefits to be derived from the wetland:**

**(i)- Flood and storm control by the hydrologic absorption and storage capacity of the wetland:**

The proposed project would result in changes in runoff patterns, alter stream hydrology, and would likely increase peak flows of streams within the project area. This has been noted but not considered in any detail.

The proposed project includes work within wetlands and flood plain areas which will alter hydrology in watersheds containing Wildcat Canyon Creek, Voelkers Creek, and Connors Creek, all of which discharge to the Silver Lake basin. Increased stormwater and snowmelt runoff, changes in watershed storage capacity, and alteration of hydrology will result. The application contains no modeling or discussion of the anticipated hydrologic changes and potential impacts resulting from changes that will occur. The applicant does not appear to have consulted with Federal Energy Regulatory Commission (FERC) or Upper Peninsula Power Company (UPPCO) to discuss the potential consequences of these activities for the Silver Lake storage basin. Areas downstream from the Silver Lake basin are still undergoing restoration from the spring of 2003 when the impoundment was breached. FERC and UPPCO consultation is necessary.

There is ample scientific evidence that construction of new roads causes changes in runoff, hydrology, and peak flows within a watershed although the applicant concludes that "stream flow changes are not likely over time and altered stream flow regimes or erosion are improbable (page 72)." Roads change the hydrology of a watershed by altering surface water flow and causing changes in runoff patterns (Jones et al. 2000; Gucinski et al. 2001; Wang et al. 2001; 2003), particularly in small watersheds (Jones and Grant 1996). Studies indicate that natural streamflow rates during periods of high flow were significantly altered in after logging road construction and included increases in streamflow during snowmelt runoff and during heavy summer storms (King and Tennyson. 1984). Additional

stream flow and runoff data should be collected by the applicant and used to determine changes in stream flow and runoff patterns that will result from the new road. Considering that grades of up to 8% slope are envisioned, runoff and associated erosion and stream flow impacts could be severe.

The applicant briefly talks about compensating cuts in floodplain areas of road crossings where filling and alteration of the floodplain is planned and increases in flood stage are predicted (pages 71 and 76). This needs further investigation and explanation.

**(ii) Wildlife habitat by providing breeding, nesting, and feeding grounds and cover for many forms of wildlife, waterfowl, including migratory waterfowl, and rare, threatened or endangered wildlife species.**

Impacts to wildlife and habitat are discussed below.

**(iv) Pollution treatment by serving as a biological and chemical oxidation basin.**

The applicant states that wetlands in the project area presently have little opportunity to function for pollution treatment due to the lack of water quality stressors in this relatively undeveloped landscape (page 77), but fails to acknowledge likely contaminant introductions to the area environment through proposed use of the Woodland Road for hauling metallic sulfide ores. This is further discussed below.

**(v) Erosion control by serving as a sedimentation area and filtering basin, absorbing silt and organic matter.**

The applicant fails to acknowledge that the proposed road would be a major source of sediment input into area streams and wetlands, despite existing research that supports this conclusion. Erosion and sedimentation impacts are discussed below.

**(c) Wetlands are valuable as an agricultural resource for the production of food and fiber, including certain crops which may only be grown on sites developed from wetland.**

The applicant states that "the only agricultural crops that grow on the wetlands in the general area of the proposed project are trees and blueberries" (page 78), and concludes that the proposed road will facilitate access to the land for harvest of these agricultural products. In 1993 the Great Lakes Indian Fish and Wildlife Commission published "Plants Used by the Great Lakes Ojibwa" which provides detailed data and information about traditional plant use and occurrence in the northern Great Lakes region including the proposed project area. Many of these plants occur in wet areas or wetlands. Traditional foods and medicines are an essential part of the lifeways of the Keweenaw Bay Indian Community and our access, collection, and use is protected through treaty reserved usufructory rights within the project area. Negative impact to these resources, as well as blueberries, would result from the proposed project through direct filling of wetlands, chemical contamination by heavy metals, road salts, etc., and other impacts. Impacts to area vegetation need to be more fully considered by the applicant.

**324.30311 Permit for activity listed in MCL 324.30304; approval conditioned on certain determinations; criteria; findings of necessity; criteria for determining unacceptable disruption to aquatic resources; additional showing; determination of unreasonable costs.**

**(1) A permit for an activity listed in section 30304 shall not be approved unless the department determines that the issuance of a permit is in the public interest, that the permit is necessary to realize the benefits derived from the activity, and that the activity is otherwise lawful.**

**Primary purpose is private for- profit use;** This proposed road is intended for the private use of Kennecott Eagle Minerals Company (KEMC) to haul ore from their planned Eagle Mine in the Yellow Dog Plains, for individual company profit. Related natural resource degradation and loss would be severe, extensive, and would negatively impact Keweenaw Bay Indian Community treaty reserved rights and resources. This is not in the general interest of our Community, nor is it in the public interest.

**The permit is not necessary to realize the benefits derived from the activity;** As specified in Permit application review criteria R 281.922a, Rule 2a (5) "Any activity that can be undertaken in a non-wetland location is not primarily dependent upon being located in the wetland." The activity of hauling metallic sulfide ore is not primarily dependent upon being located in wetlands and thus the permits are not necessary to realize the supposed benefits from the activity.

**The activity is not otherwise lawful;** In a letter from Jim Sygo, Interim Director of the Michigan Department of Environmental Quality, to Ms. Michelle Halley, Ms. Cynthia Pryor, Ms. Susan LaFernier, Ms. Kristi Mills, Mr. Jon Saari, and Mr. Peter Dykema, dated January 15, 2010, Mr. Sygo states "If Kennecott Eagle Minerals Company (KEMC) opts to utilize a route for transportation of ore other than that identified in its application for a mining permit, it will be required to submit a request to amend the mining permit and receive approval from the DEQ." Through submittal of this permit application for the proposed Woodland Road construction project KEMC has opted to use this route for transportation of their ore, and therefore must submit a request to amend their mining permit. Considering the scale and spatial distribution of negative environmental and natural resource impacts identified in the Woodland Road permit application, as well as knowledge regarding environmental impacts of mining haul roads in general, which are not discussed in the Woodland Road permit application, opting to use this route for transportation of ore represents a significant change from the conditions of the approved KEMC mining permit and is subject to the same review process as provided for in section 63205(4) to (9) of NREPA. As outlined in Michigan Administrative Code, Rule 206, the application for amendment shall include revisions of the following:
(a) The environmental impact assessment.
(b) The mining, reclamation, and environmental protection plan.
(c) The contingency plan.
(d) Federal, state, and local permits and licenses that are anticipated to be required.
(e) Provisions for financial assurance required under R 425.301.
(f) Other terms and conditions of the mining permit.

Until such time as an amendment to KEMC's mining permit has been approved any activity related to the Woodland Road is not otherwise lawful.

**(2) In determining whether the activity is in the public interest, the benefit which reasonably may be expected to accrue from the proposal shall be balanced against the reasonably foreseeable detriments of the activity. The decision shall reflect the national and state concern for the protection of natural resources from pollution, impairment, and destruction. The following general criteria shall be considered:**

**(a) The relative extent of the public and private need for the proposed activity.**

**Public support misstated;** The applicant claims public support for this project based upon negative reaction to their other mining plan project transportation proposals (Page 2 of 133). Proper public input should be directly related to the issue being considered and until such time as a similar public input process is provided for, public support should not be assumed. If the original plan of using Triple-A-510-550-US-41 is being abandoned because of public comments and objections, the Woodland Road alternative needs to be evaluated using the same public input standards.

**Transportation regulatory risks stated are not substantiated or likely;** The applicant states that the City of Marquette, Ishpeming, and Negaunee, along with townships the County and Michigan Department of transportation have been actively planning for traffic levels in their jurisdictions and suggest they may restrict truck traffic through the area. Any traffic evaluations these entities are making has no unique relationship to Kennecott activities. Traffic evaluation and planning is part of the normal course of business for these entities. Traffic levels of between 2,000 – 50,000 vehicles per day on existing major routes through Marquette, Negaunee, and Ishpeming indicate that current routes are sufficient to handle additional traffic. It is not reasonable to suggest that truck traffic would be banned through these municipalities as the applicant has suggested.

**Need benefits stated are incorrect or unsubstantiated;** The applicant claims that road is necessary for the public to realize financial benefit from the increase in mining activity is increasing in their defined Project Service Area (Page 3 of 133). This is incorrect. Currently there is no mining activity at all in the Project Service Area.

The applicant variously states that school children will be safer, noise reduction benefits will be provided, benefits will be provided for elderly persons and persons with respiratory illness, and accidents will be prevented if Woodland Road is constructed but does not substantiate these claims with supporting documentation or data. Appropriate data would include predicted accident rates, emissions data and modeling, etc. Claims of necessity for protection of children, the elderly, the infirm, and the public should not be made lightly and should not be made without supporting documentation. Failure to demonstrate such claims lessens the integrity of an application.

The applicant states that the demand for emergency services has increased in the project area, but provides no data or information to support this claim. Supporting data should be provided such as 911 calls, emergency service vehicle traffic rates, etc. This data and information is available if requested

and should be required if used as a demonstration of need. Protection of human health and public safety is a serious matter and proper evaluation needs supporting documentation.

Improved landowner access is claimed as a benefit, but is not supported by data or information, such as petitions, or minutes from public meetings held to collect public input specific to this project. Again, additional data and information should be provided to support such claims in the application.

**Public access uncertain;** The contention that the road is partially for public benefit is incorrect. Any public access is uncertain and should be discounted when considering this project. Traffic consisting primarily of 40-100 ton ore haul trucks is not compatible with recreational use such as bird watching or berry picking. This proposed road would be privately owned with no guarantee of public accessibility. KEMC has a history of restricting public access to public lands in the Yellow Dog Plains. They have hired security guards to prevent people from accessing CFR lands and have at times blocked off vehicle access to the Northwest Road in the Yellow Dog Plains, which they do not own. KEMC has informed people that access to its own CFR status lands is trespassing and requires written permission, and is currently attempting to obtain permits to fence off a significant acreage of public lands in the Yellow Dog Plains for their private use for planned Eagle Mine operations. Current and past behavior can be used to predict future behavior and actions, or at least establish the lack of certainty for public access. This uncertainty regarding the potential for public access is sufficient to remove public access potential as a consideration when reviewing potential public benefits.

**Greenhouse Gas Reduction Benefits;** The applicant spends considerable time discussing the benefits of the greenhouse gas reductions that would result from using the Woodland Road versus other alternatives. On page 79 they state that "The increased emissions alone are reason to reject the CR 550 and CR 510 alternatives."

**Stated Greenhouse Gas Savings are Incorrect;** Greenhouse gas accounting is a complex endeavor. When the project is thoroughly examined, greenhouse gas emissions become a neutral or negative issue if considered in the permitting decision. Greenhouse gas balance calculations for this particular project would require consideration of construction, land clearing, maintenance, and use (e.g. Graham et al. 2004). Another consideration for this project would be carbon sequestration loss of forested lands within the road footprint. Of the main factors necessary to consider for determining a greenhouse gas balance for the proposed Woodland Road, the applicant has only considered one – road use.

Calculations are complex as stated previously, and more project detail is necessary to accurately determine the greenhouse gas balance for the project. An approximate carbon balance can be calculated using existing literature sources. Carbon dioxide generated during project construction and land clearing is approximated at between 65,380 tons and 102,670 tons, or 1,400 – 2,300 tons per mile of new road constructed (Williams-Dery, 2007), plus direct carbon loss due to land clearing of approximately 50 tons per acre or an equivalent of 183 tons carbon dioxide equivalent per acre cleared (Mader, S. 2007). Carbon sequestration loss due to maintenance of a permanently cleared road footprint would amount to around 490 tons of carbon per year or an equivalent of about 1,798 tons of carbon dioxide (Hilchey, 1993). Thus construction of the Woodland Road would create a significant carbon deficit before any travel occurred over the route.

Annual carbon dioxide reductions estimated by the applicant from using the Woodland Road versus other alternatives amount to between 7,218 tons and 4,124 tons depending upon the alternative route. To erase the carbon deficit, somewhere between 31 to 48 years of Woodland Road use would be required when compared to the AAA – 550 alternative. Woodland Road use compared to the 510 alternative would require between 28 and 44 years to eliminate the carbon deficit created by construction. The amount of carbon sequestration loss resulting from maintenance of the permanently cleared Woodland Road is sufficient that the Dishno Road – CR607 alternative may result in less carbon dioxide generation over time. The calculations above don't consider other activities necessary for upgrading alternative routes, but clearly the claim of benefit through reductions in greenhouse gas generation by using the Woodland Road are false. Considering that KEMC only plans on mining for 7 years at their proposed Eagle Mine, the number of years required to eliminate the carbon deficit created by construction and clearing will be significantly extended.

**(b) The availability of feasible and prudent alternative locations and methods to accomplish the expected benefits from the activity.**

The burden of evaluating feasible and prudent alternatives is placed upon the applicant. Substantive review of the applicant's proposed alternatives can only be undertaken by the public and the MDNRE if sufficient data and information is provided for the evaluation. As noted in comments provided below (R 281.922a (3)) significant data and information is missing from the application that is critical for review and consideration of alternatives. Regardless of lack of data with which to fully evaluate alternatives, existing research and knowledge on the negative natural resource impacts caused by new road construction is available and can be used to draw conclusions on natural resource impacts. Saunders et al. (2002), note that roads are the primary cause of habitat fragmentation and reduction in the northern Great Lakes region. Wheeler et al. (2005) found that the greatest damage to aquatic ecosystems is caused when roads are constructed through undeveloped watersheds and Trombulak and Frissel (2000) recommended avoidance of construction of new roads, especially in areas that are roadless or sparsely populated. Mitigation may be proposed to offset the negative effects of roads, but mitigation projects are often unsuccessful due to the numerous factors by which aquatic organisms are affected (Trombulak and Frissell 2000). Research by natural resource experts over many years indicate that, due to the negative, pervasive, and widespread impacts of new road construction in areas similar to that of the proposed Woodland Road, construction of new roads in such areas should not be permitted.

Alternative are available for the applicant. The AAA Road – 510 – 550 alternative was previously considered as viable transportation route by KEMC in their mining permit application for the Eagle Mine in the Yellow Dog Plains. Until such time as the KEMC mining permit amendment is submitted, reviewed, and approved the AAA Road – 510 – 550 route is also the required transportation route for KEMC. Considering that the AAA Road – 510 – 550 alternative is currently the available and required route KEMC must use for the proposed Eagle Mine, the Woodland Road should not be permitted.

**(c) The extent and permanence of the beneficial or detrimental effects that the proposed activity may have on the public and private uses to which the area is suited, including the benefits the wetland provides.**

Benefits and detrimental affects are discussed in other sections of our comments.

**(d) The probable effects of each proposal in relation to the cumulative effects created by other existing and anticipated activities in the watershed.**

Other existing and anticipated activities in the watershed have not been fully discussed or evaluated. Other activities noted by the applicant include additional aggregate mining, biomass fuel collection and wood chipping activities (page 29 of 133), landowner road construction, increased ORV activity, additional access road development, potential property development by Mr. Jilbert and associated additional fragmentation, potential for rezoning by area townships and associated development which often accompanies new road construction, etc.

It is widely recognized that the development of new roads leads to an increase in habitat fragmentation, a decrease in habitat patch size, and forest conversion from increased human access **(Saunders et al. 2002 and Forman and Alexander 1998).** The development of primary roads generally leads to an increase in secondary roads creating a network across the landscape **(Forman and Alexander 1998).** These impacts are not adequately discussed or even acknowledged by the applicant.

Additional effects would also be associated with the proposed KEMC Eagle Mine should mining ever commence. Theoretically, if KEMC began both Woodland Road construction and Eagle Mine construction in 2010, as they have publically stated as their desired plan, then the Woodland Road would be finished in 2015 or 2016. At this point in time construction and mining at the Eagle mine would have been ongoing for 5-6 years without the Woodland Road. Existing routes would likely be used for KEMC Eagle Mine activities but there is no discussion of which routes would be used or what associated work would be required, such as wetland filling, stream crossing construction or modification, paving, grade cuts, road upgrades, etc.

The potential for additional road construction and associated activities, as well as additional details about KEMC's proposed Eagle Mine plans needs to be considered in this application as part of cumulative and anticipated activities in the watershed. These activities can be properly considered in the mining permit amendment that KEMC is obligated to submit due to a change in transportation plan for the proposed Eagle Mine.

**(e) The probable effects on recognized historic, cultural, scenic, ecological, or recreational values and on the public health or fish or wildlife.**

**General comments on probable effects;** The application contains insufficient data and information with which to fully evaluate probable effects. Data and information gaps and insufficiencies are presented in R 281.922a (3) below.

**Effects on historic and cultural uses;** Despite existing documentation that the area of the Silver Lake basin is a significant Indian habitation and artifact site in the Upper Peninsula Michigan there is no discussion of traditional cultural properties and only limited discussion of traditional cultural uses and practices within the project area. While the Keweenaw Bay Indian Community retains treaty reserved usufructory rights within the project area and surrounding areas, the permit application contains no discussion of the effects of the project on treaty reserved usufructory rights despite the fact that the project will negatively impact these rights. These issues need to be considered.

There are two federally recognized Tribal Historic Preservation Officers in the Upper Peninsula of Michigan. Consultation with the Officers is necessary.

**Probable effects on scenic values;** the application contains no data or information regarding the negative effects on scenic values. The applicant simply states "parts of the road go through land with scenic qualities (page 75)." Further effects evaluation is necessary.

**Ecological values and impacts to habitat, fish, wildlife, wetlands, and aquatic resources;**

Ecosystem impacts resulting from this project will be severe, disruptive and destructive. These impacts are discussed below. Completion of this project is contrary to established ecological value, goals, and objectives for the Great Lakes ecosystem.

Natural resources in the Great Lakes basins and the public interest in protection and preservation of these resources have been variously quantified and discussed in many forums on State, local, and National levels. Significant time and effort has been invested by various federal government agencies, tribal nations, state and local governments, community groups, private organizations, non-profit organizations, and the general public on quantifying and categorizing existing natural resources, determining natural resource threats, developing preventative measures for protection of natural resources, and reaffirming the public interest in protection, preservation, and restoration of the Great Lakes ecosystems. Guidance documents and forums relevant to this project include the Lake Superior Lakewide Management Plan, the Great Lakes Regional Collaboration, The Great Lakes Fish Community Objectives for Lake Superior, the Great Lakes Fish and Wildlife Restoration Act, the Great Lakes Restoration Initiative Framework, Michigan's Great Lakes Restoration Strategy, the Michigan Strategic Framework for the 2010 Great Lakes Restoration Initiative, and the Michigan Wildlife Action Plan.

Common themes within the above referenced plans, initiatives and acts include the recognition of the negative impacts of habitat fragmentation, pollutant additions to the Great Lakes ecosystems, contamination of waters, invasive species introduction and spread, habitat destruction, wetland destruction, and other impacts which will result from this proposed project and are discussed in more detail below. Considering that the proposed project is contradictory to nationally identified values and natural resource goals, the permits should be denied.

The Michigan Wildlife Action Plan (WAP) is one guidance document that can be used to consider some the impacts from the proposed project. During development of the WAP natural resource

professionals attending the Regional Technical Workshops were asked to assess threats to wildlife and habitats within their lake basin or terrestrial ecoregion.

Six categories of natural resource threats identified as priority included:

- **Habitat Conversion** (including wetland modifications and riparian modifications)
- **Non-consumptive Biological Resource Use**
- **Pollution** (including chemical contamination and sedimentation)
- **Biological Interactions** (including invasive plant, disease, and parasite introduction and spread)
- **Modification of Natural Processes** (including altered hydrologic regime and fragmentation)
- **Education** (including lack of scientific knowledge)

Two of these threats, invasive species and habitat fragmentation, were identified as being the highest priority threats for both aquatic and terrestrial environments.

Impacts likely caused by construction and use of the proposed Woodland Road include habitat conversion, pollution, biological interactions, modification of natural processes, and other negative natural resource impacts identified through an intensive public process, are contradictory to State identified values and natural resource goals and thus the permits should be denied.

**Wetland Modifications and Impacts**

The proposed project will result in wetland modification, through direct filling and through impacts that spread beyond the direct filling. Chemical contaminants will be introduced into the area through use of the road as a mine haul road. Sediment will be input into wetlands over the linear distance of 4.7 miles of wetland filling proposed through fugitive dust, direct runoff, and erosion. Sediment input into wetlands and streams will be exacerbated by the applicant's choice of 1:2 slopes for the road bed, as opposed to standard recommendations of 1:3 or 1:4 slopes. Invasive species will be introduced along the roadway and spread into area forests and wetlands. Alteration of hydrologic regimes will occur within the watershed and the 23 streams that the road crosses. Direct wetland habitat loss and wetland habitat fragmentation will be severe and permanent. The applicant does not acknowledge however that the natural resource impact will extend well beyond the boundaries of the road and beyond the applicant's ecological survey boundaries of about 100-150 feet on either side of the proposed road. Wetlands provide travel corridors and resources for many species which migrate long distances to fulfill food, shelter, territorial, and reproductive needs. Travel corridors and species migration has not been investigated or adequately discussed in the application. Invasive species issues have not been examined or discussed adequately. Chemical contamination and impacts to wetlands would result from the proposed road construction project. Considering the harm caused by contamination of 162 separate wetlands, the permits should be denied.

Roads can cause the upland side of a wetland to flood and the down land side to drain, diverting the surface water flow in the process and causing the biological characteristics to change. A road can also critically impact and change the subsurface water flow in a wetland, depressing the water table and

affecting the amount of groundwater available (Darnell 1976). This depression can negatively affect many water-dependent fauna and plants. Additional wetland area will be damaged and degraded by alteration of hydrology caused by proposed project activities. Considering the likely scale of the overall damage to wetland resources the permits should be denied.

**Amphibians**

Ecological survey data for amphibian populations is inadequate to evaluate the impacts likely caused by wetland filling, sedimentation increase, habitat fragmentation, and introduction of chemical contaminants into the area ecosystem. Amphibian species identified by the State of Michigan as Species of Special Concern that are known or suspected to occur within the project area include the blue spotted salamander, spotted salamander, four toed salamander, mud puppy, western chorus frog, pickerel frog, northern leopard frog, and possibly others. The applicant's conclusion regarding amphibian surveys are that "the expected assemblage of frog and toad species is present in the study area." No discussion of impact is provided. Impact to amphibian populations will be decidedly negative.

**Reptiles**

Ecological survey data for reptiles, particularly turtles, is inadequate to evaluate the likely impacts caused by wetland filling, stream modifications, road crossings, sedimentation increase, habitat fragmentation, and introduction of chemical contaminants into the area ecosystem. The applicant states that only one turtle was noted during completion of ecological surveys. The eastern box turtle has been found in both Baraga and Houghton Counties and is potentially present within the project area. The applicant states that they did not find any wood turtles, which are known to be present within the project area, however the applicant did not conduct surveys specifically designed to locate and identify populations of wood turtles or other turtles. Impacts to reptile populations and habitat will be decidedly negative.

**Bird Populations and Corridors**

Eighty percent of America's breeding bird population and more than fifty percent of the eight hundred species of protected migratory birds rely on wetlands (Mitsch and Gosselink 1993). Bird species are particularly sensitive to traffic noise pollution and undergo population density depressions from the presence of a road at distances from 200m to 2000m (Van der Zande 1980, Reijnen and Foppen. 1997). Many choose not to nest near roads (Trombulak and Frissell 2000). Birds identified by the applicant include WAP Species of Special Concern including the bittern, black duck, woodcock, bald eagle, black throated blue warbler, brown thrasher, eastern kingbird, field sparrow, golden winged warbler, great blue heron, least flycatcher, marsh wren, marline, northern flicker, palm warbler, red headed woodpecker, ruby crowned kinglet, sedge wren, spruce grouse, vesper sparrow, whip-poor-will, and Wilson's snipe. Additional species of special concern are likely present including but not limited to the upland sandpiper and the black backed woodpecker. Kirtlands Warbler have been identified in the Yellow Dog Plains and may be present within the project area. No efforts were made to conduct surveys designed to detect the Kirtlands Warbler. Little discussion is provided regarding impacts to

birds. The applicant simply concludes that the surveys demonstrate that the proposed road project is not likely to have any substantial deleterious effects on bird species that inhabit wetlands/aquatic habitats in the project area, although it is not clear how the surveys do so. Considering the negative impacts to birds and bird habitat the permits should be denied.

**Habitat fragmentation impacts**

The project would result in significant and disruptive habitat fragmentation. The applicant only briefly considers the impact of habitat fragmentation (e.g. page 53) and then discounts the potential impacts as minimal and potentially beneficial to wildlife edge species and species using the road as a travel corridor (e.g. page 53, page 61). The applicant generally concludes "the ecological, fish, and wildlife values will be affected to some extent as they are with any changes in the natural environment but the impacts should only be minimal and are not considered unacceptable or substantial as documented in the ecological studies that have been done for the project" (page 75). The applicant further minimizes the habitat fragmentation impacts with statements such as "the area of the road project already contains a vast network of small private roads and some public roads within the project area (page 73), "the fact that there are many county roads, logging roads, and trails in the project area serve to minimize the effects on some species of birds," (page 60) and "the proposed road does not open up previously undisturbed habitats, which could have an effect on large mammal species" (page 61).

While it is true that roads provide benefit to some species the benefits are generally provided to common edge species or to species such as ravens, crows, turkey vultures and other scavengers, which take advantage of road kill provided by the road. Habitat fragmentation on the scale of the proposed project however provides decidedly negative natural resource impacts, a conclusion that is widely supported by existing research literature which generally recognizes that impacts of forest roads are "unequivocally negative and widespread" (Gucinski, et. al. 2001, Forman and Alexander 1998). The difference in negative natural resource impact caused by lightly used seasonal logging roads and ATV trails versus a 365 day-per-year twenty-four-hour per day mining haul road are not recognized or fully considered in this application, but these differences are substantial and should be evaluated. The negative resource impact of habitat fragmentation is recognized by the State of Michigan and has been identified as a priority resource threat in the WAP. Animal behavior is known to be modified through road avoidance and disturbance (Forman and Alexander 1998). Edge species benefits also may result in detriment to native species. For example, the brown-headed cowbird, a brood parasite that reduces the reproductive success of its host, is known to penetrate forests at least 200 meters from edge and has been identified as potential limiting factor in rehabilitation success for the Kirtlands Warbler. In addition, many opportunistic nest predators, such as jays, crows, raccoons, and opossums, are common in roadside environments (partially because of road kill) and often concentrate their predatory activities near edges. Increases in nest predation from these opportunities can extend up to 600 meters from an edge, (Wilcove, 1988, Wilson and Porras. 1983).

Roads act as barriers that fragment wetlands habitat and have short and long term impacts on wildlife. This is particularly true in regards to the conservation of wildlife species that require corridor linkage to critical habitat. Fragmenting landscapes into patches and restricting and isolating wildlife populations by amplifying the risks associated with movement have drastic consequences for the

preservation of biological diversity" (Harris and Gallagher 1989). Protected species such as lynx, wolf, and cougar, and other large home range species such as bobcat, bear, and moose travel long distances to seasonal resources for food, reproduction, and winter survival. Disruption of long-term corridors can severely alter the ability of these animals to meet their needs. Terrestrial animals, such as amphibians and turtles, as well as others, exhibit reluctance in crossing roads (Fahrig et al 1995, Findlay et. al., 2001, Forman et. al. 1998). Wildlife and birds require undisturbed expansive areas for safe travel between seasonal habitat resources. They need these areas to protect them from predation, hunting, and harassment as well as the provision of food and cover as they travel through the uplands of Michigan's Upper Peninsula. This proposed road project size and level of traffic is much larger than the average logging road that supports relatively short –term and seasonal traffic. Birds, mammals, reptiles and amphibians will be killed as they attempt to use historical corridors. The applicant doesn't deny this impact but merely presents it as a necessary casualty for their profit.

Over the short term, roads cause an obvious loss of habitat as well as increased wildlife mortality. Over the long term, the damage can be much more severe. When critical wetland and aquatic corridor habitat is considered the impact due to filling of wetlands is much greater than that recognized by the applicant. On page 75 the applicant states that "no large wetland impacts have been proposed." This is not true when critical corridor habitat is considered.

In the applicant's assessment of impacts to large mammals it is recognized that large mammal mortality will result from use of the Woodland Road (page 60) and that the road will cause disturbance for some large mammal species including moose, gray wolf, and black bear. However the applicant's final conclusion is that large mammal species have adapted well to areas of low level development present in the project area and other areas of the Upper Peninsula and the proposed road is not expected to have any substantial affects on large mammals (pages 60-61). This conclusion fails to acknowledge the purpose and planned use of the proposed road, and contradicts existing scientific evidence. These issues and associated impacts are well presented in the comments provided from the Michigan DNRE Wildlife Division dated January 15, 2010.

When considering likely negative impacts to wildlife populations, travel corridors, and area habitat, the proposed road would be detrimental to area wildlife movements and survival.

**Invasive Species**

The applicant acknowledges in their application that the proposed project area is relatively free of invasive species, but does not adequately recognize that the proposed project would result in significant introduction of invasive species into the immediate project area and beyond. Many native plant species do not tolerate direct sunlight created by road clearings leading to a predominance of invasive plant species along the road clearings, which penetrate into forest areas. Roads also act as a dispersal corridor, allowing invasive species to penetrate into previously inaccessible areas. Vehicles or vehicular effects generally introduce invasive species. Plants spread along roads due to vehicle-caused air turbulence (Forman and Alexander 1998). In wetlands where roads have been constructed, the native plants are already stressed due to hydrologic changes and therefore cannot fend off invasive colonizers (Mitsch and Gosselink 1993). In rivers and streams invasive/exotic plant species are carried

downstream with time. This results in significant negative impact to the overall health and biodiversity of both wetlands and riparian corridors. Considering that 162 separate wetlands and 23 streams will be crossed by this road the overall negative impact of invasive species introduction to the area would be quite substantial. Considering likely negative impacts due to invasive species introductions throughout the project area the permits should be denied.

**Disease and Pest Introductions**

New roads serve as corridors for introduction of disease and pests into adjacent forest and wetland communities. These potential impacts have not been discussed or evaluated by the applicant.

**Aquatic Resource Impacts**

Aquatic resource impacts include increased sedimentation into area streams, chemical contamination of waterways, and associated degradation of aquatic ecosystems. Impact to area wetlands are variously discussed above. The proposed project includes 23 stream crossings. Most impacts to aquatic ecosystems indirectly affect organisms by altering their habitat (Allan and Flecker 1993). The most harmful impacts can render the habitat unlivable for sensitive species (Allan & Flecker, 1993). According to US Environmental Protection Agency (1996), the most common pollutant to streams nationwide was sediment, which was a contributing factor for 50% of impaired streams. According to Meehan (1991), roads contribute more sediment to streams than other land management activities. Sediment inputs occur not only through road construction, but also at road crossings regardless of the use of best management practices. Sedimentation can also occur through runoff during storm events (Gucinski et al. 2001). The input of sediment at high concentrations impairs aquatic productivity and kills aquatic organisms (Newcombe and Jensen 1996). Increases in fine sediment such as sand have been shown to negatively affect fish through reduced fry emergence, juvenile densities and carrying capacity (Gucinski et al. 2001).

The former Michigan Department of Environmental Quality (MDEQ) Great Lakes and Environmental Assessment Section Procedure #51 (GLEAS 51), "Qualitative Biological and Habitat Survey Protocols for Wadable Streams and Rivers", was utilized by contracted consultants of the applicant to assess streams, fish and macroinvertebrate communities in 2008 alone. The gathering of baseline fish, macroinvertebrate and habitat quality data prior to proposed road construction activities is a starting point, but is an incomplete utilization of GLEAS 51 scientific rationale. Without stating any intent of commitment to the continued assessment of the stream habitats, fish and macroinvertebrate communities in systems that will be impacted by the Woodland project post-construction, there is no indication that the applicant plans any additional assessment work to monitor ongoing health of the aquatic system. In addition, the GLEAS 51 surveys were conducted only at proposed road crossings. Aquatic systems are dynamic. Organisms travel up and down to fulfill survival and reproductive needs.

Existing information and study data is available with which to consider the negative impact to the aquatic environment that would result from this road construction project. Roads were found to degrade stream habitat for aquatic species, including salmonids, by accelerating erosional processes and

modifying natural drainage networks. Soil erosion rates (m3/hectare) were 30 to 300 times higher on forests with roads than undisturbed forest. (Furniss et al, 1991). In a study conducted in 1983, roads were found to be responsible for 61% of the soil volume displaced by erosion in northwestern California (McCashion and Rice, 1983). Another study confirmed that roads were direct sources of sediment delivery to streams, with approximately 34% of road drainage points entering stream channels. The majority of the sediment produced (80%) was material finer than 0.004 mm (Bilby et al, 1989). Additional work confirming sedimentation caused by roads concluded that it was typical that very fine sediment washed from a forest road surface directly into a stream during rainfall events. During the study period, the road had an average traffic rate of 290 axles daily, primarily logging trucks. During dry weather, there was little difference in stream turbidity upstream and downstream of the culvert. After rainfall events, sediment input from the road frequently increased the levels of suspended sediment downstream of the culvert compared to upstream levels (Bilby, 1985). Additional work found that forest road erosion was a source of fine sediment in stormflow runoff, even after mitigation measures. Two sites were studied, one with a roadbed grade of 7% and the other with a grade of 5%. The usual practices after road construction of grass seeding on cut and fill slopes and surfacing the roadbed with gravel were delayed for the purposes of this study. The greatest percentage of soil loss occurred during the first winter after road construction, with 42% of the total soil loss from roadbeds (tons/acre) occurring during this period, as well as 58% of the loss from fill slopes and 82% of the loss from cut slopes. Cut slopes had the highest soil erosion in the winter, due to dry ravel and frost heaving. Fill slopes had the highest erosion in early spring. Both cut and fill slopes generally experienced soil erosion of all particle sizes, while more than half the erosion from the roadbed surface was composed of finer particles. Soil erosion rates were higher on the roadbed of the steeper 7% grade site than on the 5% grade site Swift, 1984). These grades are similar to those proposed for the Woodland Road. Another study quantified erosion rates and determined that heavily used gravel forest roads (more than four logging trucks per day) generated up to 440 tons of sediment/km/year from surface erosion (Reid and Dunne, 1984). This level of traffic is much less than that proposed for the Woodland Road.

Additional resource materials are available for consideration when determining the likely impact to fisheries, especially trout. Brook trout populations were found to have declined significantly after stream sedimentation levels increased. Populations of stream benthic invertebrates (the major food source of brook trout) declined significantly after stream sediment levels increased. Higher fine sediment levels in a stream resulted in a loss of pool habitat, fish cover, changes in stream velocity, and higher summer water temperatures (Alexander and Hanson, 1986). Other resource investigations have noted that trout standing stocks decreased as the density of road culverts (a measure of the extent to which roads crossed watercourses) increased (Eaglin and Hubert, 1993).

Clearly the bulk of scientific evidence contradicts the applicant's conclusions that "ecological, fish, and wildlife values will be affected to some extent as they are with any change in the natural environment, but the impacts should only be minimal and are not considered to be unacceptable or substantial as documented in the ecological studies that have been done for this project." (page 75). Considering the above factors indicating the impacts to aquatic resources will be substantial and severe, the permits for construction of the Woodland Road should be denied.

**Chemical Contamination**

The impact of chemical loading to the local environment has not been discussed by the applicant. Chemical inputs into the terrestrial and aquatic environments will include copper, cobalt, nickel, mercury, platinum group metals, mercury, other heavy metals, sulfides (hence sulfate), sulfuric acid, road salts, blasting compounds (nitrates), oil and grease and others. The lack of data or consideration is a significant omission from the submitted application. Contaminants in river ecosystems have direct physiological effects, both non-lethal and lethal, and these effects may ramify through food webs to other members of the biological community (Allan, 2002). Chemical loading of aquatic environments will be transferred downstream over time. Copper is toxic to aquatic life at extremely low concentrations. Using the default hardness value for Upper Peninsula of Michigan surface waters of 50 mg/L, the calculated Final Acute Value for copper at the groundwater-surface water interface (GSI) is approximately 13 parts per billion. The calculated Final Chronic Value is 5 parts per billion. It is likely that these concentrations would be exceeded given the proposed use of the road and the chemical composition of the metallic sulfide ore KEMC would be hauling. This would result in severe impact to aquatic systems along the proposed Woodland Road route.

Studies on mining haul road environmental impacts are available for comparison, particularly for the ore haul road associated with the Red Dog Mine in Alaska. Investigation completed along the Red Dog haul road by the U.S. Geological Survey found that metal loadings from individual snow samples collected in April 2006 near three creeks, 13 to 50 meters from the road, were greater by factors of 13 to 316 for cadmium, 28 to 589 for lead, and 8 to 195 for zinc (Brumbaugh and May, 2008). The U.S. Geological Survey further concluded that "Although procedures have been implemented in recent years to reduce the quantities of metal-enriched fugitive dusts, particulates dispersed near the road during the winter of 2005–06 were enriched in metals and these particulates contributed considerable metal loadings to the nearby terrain." Additional investigation of heavy metal loading to the surrounding environment caused by use of the Red Dog Mine haul road found that although most impacts were within 10 meters of the road, zinc, lead and cadmium concentrations were found to be elevated at significant distance (12-25 kilometers) from the haul road. (Hasselbacha et al. 2005). Additional work completed by the National Park Service (NPS) in Cape Krusenstern National Monument in June–July 2000 to determine whether there were elevated lead, zinc, and cadmium levels in moss near the mine haul road. The NPS transect sampling showed that metals concentrations decreased rapidly with distance from the road. However, concentrations were still elevated at transect endpoints 1,000 and 1,600 m from the road. These are significant finding with serious implications for potential impact considerations associated with this proposed Woodland Road. No such discussion or consideration has been provided by the applicant.

Considering the above and considering that additional contaminant inputs into the surrounding environment would also occur, and considering the likely negative impact to plants, wildlife, and the likely degradation of aquatic systems caused by pollution, the permits for the proposed Woodland Road should be denied.

**Proposed wetland mitigation**

The predominant mitigation proposed by the applicant includes construction of new wetlands primarily within borrow pits created by mining sand and gravel for road construction. Existing research evidence suggests that constructed wetlands generally fail to replace benefits lost (National Research Council, 2001). The applicant's proposed mitigation plan should replace wetland benefits lost, and not merely be convenient for the applicant. Water-filled sand pits cannot and should not be considered as sufficient mitigation for the amount of riparian and wetland corridor destruction that will result from this project.

The applicant states in their wetland mitigation performance standards that if the mitigation wetlands do not meet the performance standards or are not progressing as desired that Woodland Road LLC may take action (Page 102), which means that Woodland Road LLC may also not take action. Action to correct poorly performing mitigation sites should be mandatory and not subject to the preference of the applicant.

The applicant establishes a standard of up to 10% allowable amount of invasive species within mitigation wetlands. This is inappropriate as a performance standard. Considering the current general lack of invasive species within the area of the proposed road and known detrimental effects caused by invasive species, the performance standard should be none and measures should be required to address occurrences of invasive species.

In addition to the above consideration, some of the applicant's mitigation plans include wetlands constructed in watersheds other than that which wetlands will be filled. This results in loss of watershed specific wetland benefits which need more consideration. Mitigation plans should include replacement within the same watershed as the loss.

Considering the inadequacy of the applicant's proposed mitigation and mitigation area performance standards, the permit application should be denied.

**(f) The size of the wetland being considered.**

In the applicant's revised wetland impact spreadsheet the area of wetland impact can be calculated as a total of 27.14 acres or a total of 37.65 acres. This discrepancy needs to be explained. Independent verification of wetland impact acreage is likely necessary.

The applicant has not considered all wetland area impacted. Impacted area will extend beyond the footprint of the road and include areas impacted by fugitive dust and introduction of contaminants and sediment over the approximately 4.7 linear miles of wetlands in which wetland filling will occur.

The applicant has not considered wetland impacts caused by proposed sand and gravel borrow site locations, many of which are located immediately adjacent to existing wetlands (e.g. Page 90 site D-2). Excavation immediately adjacent to existing wetlands will alter area wetland hydrology.

**(g) The amount of remaining wetland in the general area.**

The applicant proposes filling within 162 wetland areas along 4.7 miles of the road, which, regardless of the amount of remaining wetland, will negatively impact an much larger acreage of wetland within the project area.

**(h) Proximity to any waterway.**

Proximity to waterways and associated impacts are discussed above.

**(3) In considering a permit application, the department shall give serious consideration to findings of necessity for the proposed activity which have been made by other state agencies.**

Findings of the Michigan DNRE (formerly Michigan DNR) Fisheries and Wildlife Divisions conclude that the proposed project will result in negative resource impacts to terrestrial and aquatic ecosystems. The Wildlife Division states "The proposed road poses some potentially detrimental environmental effects particularly the expansion of primary road into previously poor access lands, a loss of 31 acres of wetlands, and an increase in habitat fragmentation." Findings of the Michigan DNRE Fisheries Division include "Roads are typically built within remote areas to promote activities such as logging or mining and, although these activities may depend on roads, we know that the effects of roads on aquatic habitat and species are unequivocally negative and widespread (Gucinski et al. 2001)."

Considering that feasible and prudent alternatives do exist, and are in fact required until such time as KEMC has an approved amendment to their mining permit, these comments should be given serious consideration as opposition to the proposed project and the permits should not be granted for the Woodland Road.

**(4) A permit shall not be issued unless it is shown that an unacceptable disruption will not result to the aquatic resources. In determining whether a disruption to the aquatic resources is unacceptable, the criteria set forth in section 30302 and subsection (2) shall be considered. A permit shall not be issued unless the applicant also shows either of the following:**

As noted above, the proposed project will result in significant and severe disruption of aquatic resources within the project area. As such the applicant has not met the required demonstration requirement and the permits should be denied.

**(a) The proposed activity is primarily dependent upon being located in the wetland.**

As previously noted, the proposed activity is not primarily dependent upon being located in the wetland.

**(b) A feasible and prudent alternative does not exist.**

As previously noted, a feasible and prudent alternative does exist and is in fact legally required for use by KEMC as their transportation route for their proposed Eagle Mine until such time as a mining permit amendment has been submitted, reviewed and approved.

**R 281.922a Permit application review criteria.**

**Rule 2a. (1) The department shall review a permit application to undertake an activity listed in section 30304 of the act according to the criteria in section 30311 of the act.**

**(2) As required by subsection 30311(4) of the act, a permit applicant shall bear the burden of demonstrating that an unacceptable disruption to aquatic resources will not occur as a result of the proposed activity and demonstrating either of the following:**

**(a) The proposed activity is primarily dependent upon being located in the wetland.**

As previously noted, the proposed activity is not primarily dependent upon being located in the wetland.

**(b) There are no feasible and prudent alternatives to the proposed activity.**

As previously noted, a feasible and prudent alternative does exist and is in fact legally required for use by KEMC as their transportation route for their proposed Eagle Mine until such time as a mining permit amendment has been submitted, reviewed and approved.

**(3) A permit applicant shall provide adequate information, including documentation as required by the department, to support the demonstrations required by section 30311 of the act. The department shall independently evaluate the information provided by the applicant to determine if the applicant has made the required demonstrations.**

The applicant has not provided adequate information and documentation to support demonstrations required and the demonstration requirement has not been met. Significant data and information is missing from the application that is critical for review. Data that is provided is often insufficient. Missing or incomplete data includes, but is not limited to:

- Traffic volume and type; critical for better quantifying habitat fragmentation effects, chemical inputs and stressors to terrestrial and aquatic environments, etc.
- Chemical contaminant impacts; chemical contamination will result to land and waters from heavy metals, road salts, blasting compounds (e.g. nitrates), petroleum products, etc. The lack of any data or discussion on contaminant types and impacts is an extremely significant omission, without which natural resource impact can not be evaluated.
- Amphibian species, populations, and habitat; the applicant did not conduct surveys for amphibians other than frog and toad call surveys although the proposed project includes filling in 162 wetlands and 23 stream crossings. Amphibian species of special conservation need are present in the project area. Amphibians are especially susceptible to low levels of contamination from road salts and heavy metals, which will be introduced into the surrounding environment from road use.

- Wolf population and habitat data; the applicant's analysis of project impact to wolves acknowledges that wolf data is not available for much of the project area and seasonal data is lacking.
- Other threatened, endangered, or rare species, populations, and habitat; the applicant did not conduct ecological surveys specifically designed to identify threatened, endangered, or rare species populations or habitat in the project area although these species are known or suspected to be present and include both State listed and federally listed endangered and threatened species. Consideration of impacts to federally listed threatened and endangered species is required by the Endangered Species Act.
- Anticipated noise levels; road noise is known to negatively impact many wildlife species and impacts quality of human life. The applicant has not provided any data on noise.
- Ambient air quality and impacts; Mining haul roads are known to negatively impact ambient air quality and deposit contaminants along the road corridor. This is a significant omission.
- Whether the applicant intends any future ecological monitoring; there is no indication that the applicant would conduct any future monitoring of ecological conditions to determine or address the negative resource impacts to terrestrial and aquatic environments that would result.
- Invasive species impacts and control measures; there is no indication that the applicant would conduct any future monitoring for invasive species to identify or address the negative resource impacts to terrestrial and aquatic environments that will result from introduction of invasive species.
- Aquatic species, populations, and habitat; Aquatic impacts caused by roads are known to extend significant distances from the road corridor. Although this fact is well established the applicant has confined their analysis to a narrow corridor in the immediate road area.
- Wildlife species, populations, and habitat; Impacts to terrestrial wildlife caused by roads are known to extend significant distances from the road corridor. Although this fact is well established the applicant has confined their analysis to a narrow corridor in the immediate road area.
- Wildlife corridors; No discussion of wildlife corridor impacts and disruption has been included. Corridors have not been identified, and no attempt has been made to identify them. This is an extremely significant omission, without which natural resource impacts can not be determined.
- Traditional cultural resources and properties; although known to be present these have not been considered.
- Treaty rights and impacts; the applicant is aware of the treaty reserved usufructory rights of the Keweenaw Bay Indian Community and other tribal nations and needs to consider impacts to these rights.
- Ecological surveys for alternatives; to properly consider project alternatives sufficient ecological baseline information and data needs to be provided. The applicant has not done so.
- Source and characterization of fill materials; sulfide bearing rocks are known to occur in the project area. Use of sulfide bearing materials for road construction has caused environmental damage to aquatic resources at other mine haul road construction project areas.

Considering that data and evaluation is lacking, and that required demonstration standards have not been met, the permits should be denied.

**(4) A permit applicant shall completely define the purpose for which the permit is sought, including all associated activities. An applicant shall not so narrowly define the purpose as to limit a complete analysis of whether an activity is primarily dependent upon being located in the wetland and of feasible and prudent alternatives. The department shall independently evaluate and determine if the project purpose has been appropriately and adequately defined by the applicant, and shall process the application based on that determination.**

**The project purpose statement is narrowly defined and presumptive.** As noted above, the DNRE is under no obligation to accept the applicant's project purpose statement as the defacto statement of project purpose.

The applicant's primary goal is to provide a route for transportation of ore from the planned Eagle Mine in the Yellow Dog Plains. Some of the documents submitted in the application are appropriately labeled as "South Haul Route." Alternatives to the proposed project transport route are available for that purpose and are in fact currently required of KEMC. Alternatives presented within this application are those that would suit KEMC goals for provision of a haul route for ore from their planned mine in the Yellow Dog Plains to their planned Humboldt ore processing facility. The road location is designed for this purpose with the starting point located near the proposed KEMC Eagle Mine, and the terminus connecting to the proposed Humboldt ore processing facility.

Timber companies have been transporting timber from areas in the Yellow Dog and Mulligan Plains, and the Michigamme Highlands for many years following existing routes. Recreation and landowner access is provided for through these same routes.

The DNRE is the agency with the authority to examine materials submitted and determine the primary purpose of the project and make a decision accordingly and needs to conclude the obvious that the primary purpose is to provide a mining haul road for KEMC.

**(5) The department shall consider a proposed activity as primarily dependent upon being located in the wetland only if the activity is the type that requires a location within the wetland and wetland conditions to fulfill its basic purpose; that is, it is wetland-dependent. Any activity that can be undertaken in a non-wetland location is not primarily dependent upon being located in the wetland.**

This is a road construction project. Wetlands are not necessary for road construction. Alternatives are available that suit the applicant's primary purpose, one of which has been previously identified as a viable alternative by KEMC, and is in fact legally required for use by the applicant. Thus the activity is not wetland dependent.

**(6) An alternative is feasible and prudent if both of the following provisions apply:**

**(a) The alternative is available and capable of being done after taking into consideration cost, existing technology, and logistics.**

Alternatives are available that suit the applicant's primary purpose, one of which has been previously identified as a viable alternative by KEMC, and is in fact legally required for use by the applicant. This alternative is available and capable of being done with existing technology and logistics.

**(b) The alternative would have less adverse impact on aquatic resources.**

The selected alternative of the Woodland Road would have significant and severe adverse impact on aquatic resources as noted and demonstrated above. The basic project purpose is to transport KEMC ore from the proposed Eagle Mine to the proposed Humboldt Mill and an existing route is available and legally required. Roads are typically built within remote areas to promote activities such as logging or mining and, although these activities may depend on roads, we know that the effects of roads on aquatic habitat and species are unequivocally negative and widespread (Gucinski et al. 2001).

**(7) If an activity is not primarily dependent upon being located in the wetland, it is presumed that a feasible and prudent alternative exists unless an applicant clearly demonstrates that a feasible and prudent alternative does not exist.**

This is a road construction project. Wetlands are not necessary for road construction. Alternatives are available that suit the applicant's primary purpose, one of which has been previously identified as a viable alternative by KEMC, and is in fact legally required for use by the applicant. Thus the activity is not wetland dependent.

**(8) Unless an applicant clearly demonstrates otherwise, it is presumed that a feasible and prudent alternative involving a non-wetland location will have less adverse impact on aquatic resources than an alternative involving a wetland location.**

As previously discussed the applicant has not clearly demonstrated otherwise that a feasible and prudent alternative does not exist. The applicant has previously identified existing transportation routes as sufficient for their project purpose, which is to transport ore from their planned Eagle Mine in the Yellow Dog Plains. The proposed Woodland Road would have significantly negative effect on aquatic resources and the permits should be denied.

**Conclusions:**

The proposed Woodland Road does not meet any identified public need but is a private for profit mining related haul road. The proposed road is not in the interest of the Keweenaw Bay Indian Community and would cause harm to treaty reserved usufructory rights of our Community.

Submittal of the permit application by KEMC for the Woodland Road project mandates that KEMC must apply for an amendment to their mining permit for their proposed Eagle Mine, and until such time as an amendment is approved, activities associated with Woodland Road are not otherwise lawful.

There are significant data gaps in the Woodland Road permit application. Impact evaluations are generally incomplete and conclusions by the applicant regarding impacts to area natural resources generally contradict existing research conclusions and scientific knowledge.

Construction of the proposed Woodland Road would be contradictory to established national and State of Michigan established ecological and natural resource goals and objectives.

Contamination of area ecosystems from metallic sulfides, petroleum products, road salts, nitrates, and other contaminants would occur and negatively impact, degrade, and destroy terrestrial and aquatic ecosystems and the wildlife which depend upon these systems.

Significant negative natural resource impacts would occur and include degradation of aquatic systems, habitat fragmentation, habitat destruction, disruption of wildlife travel patterns critical to survival, upon introduction of invasive species, sedimentation into area streams and wetlands, disease and pest introductions, and other similar impacts.

The activity is not wetland dependent and alternatives are available, one of which, the AAA-510-550 route is currently the only legal alternative available for KEMC.

Considering the above factors, the State of Michigan should deny the permits for the proposed Woodland Road project.

**324.30106 Prerequisite to issuance of permit; specification in permit.**

Sec. 30106.

**The department shall issue a permit if it finds that the structure or project will not adversely affect the public trust or riparian rights. In passing upon an application, the department shall consider the possible effects of the proposed action upon the inland lake or stream and upon waters from which or into which its waters flow and the uses of all such waters, including uses for recreation, fish and wildlife, aesthetics, local government, agriculture, commerce, and industry. The department shall not grant a permit if the proposed project or structure will unlawfully impair or destroy any of the waters or other natural resources of the state. This part does not modify the rights and responsibilities of any riparian owner to the use of his or her riparian water. A permit shall specify that a project completed in accordance with this part shall not cause unlawful pollution as defined by part 31.**

As noted above, there is sufficient information and evidence indicating that the proposed action will result in degradation and destruction of aquatic ecosystems, waters, and associated natural resources. The permits should be denied.

**References**

Allan, J. D., and A. S. Flecker. 1993. Biodiversity conservation in running waters. BioScience 43:32-43.

Allan, J. David Ph.D. 2002. Comments on BLM'S Draft Environmental Impact Statement and Draft Planning Amendment for the Powder River Basin

Alexander, G. R. and E. A. Hansen. 1986. Sand bed load in a brook trout stream. North American Journal of Fisheries Management 6: 9-23.

Bilby, R. E. 1985. Contributions of road surface sediment to a western Washington stream. Forest Science 31: 827-838.

Bilby, R. E., K. Sullivan and S. H. Duncan. 1989. The generation and fate of road-surface sediment in forested watersheds in southwestern Washington. Forest Science 35: 453-468.

Brumbaugh, W.G., and May, T.W., 2008, Elements in mud and snow in the vicinity of the DeLong Mountain Regional Transportation System Road, Red Dog Mine, and Cape Krusenstern National Monument, Alaska, 2005–06, U.S. Geological Survey Scientific Investigations Report 2008–5040, 30 p.

Darnell, Rezneat M. et al. 1976. Impacts of Construction Activities in Wetlands of the United States. U.S. Environmental Protection Agency, Ecological Research Series EPA-600/3-76-045, 396pp.

Eaglin, G. S. and W. A. Hubert. 1993. Effects of logging and roads on substrate and trout in streams of the Medicine Bow National Forest, Wyoming. North American Journal of Fisheries Management 13: 844-846.

Fahrig, L., Pedlar, J.H., Pope, S.E., Taylor, P.D., Wegner, J.F., 1995. Effect of road traffic on amphibian density. Biological Conservation 73, 177–182.

Findlay, Scott C., Lenton, Jennifer, Zheng, Ligang; Land-use correlates of anuran community richness and composition in southeastern Ontario wetlands. 2001, Ecoscience 8 (3): 336-343.

Forman, Richard T.T. and L.E. Alexander. 1998. Roads and their major ecological effects. Annual Review Ecological Systems 29:207-231.

Forman, RTT. 1995. *Land Mosaics*. Cambridge, UK: Cambridge Univ. Press.

Furniss, M. J., T. D. Roelofs and C. S. Yee. 1991. Road construction and maintenance. In Influences of forest and rangeland management on salmonid fishes and their habitats. American Fisheries Society Special Publication 19: 297-323.

Graham J. Treloar1; Peter E. D. Love; and Robert H. Crawford, 2004, Hybrid Life-Cycle Inventory for Road Construction and Use; Journal of Construction Engineering and Management, ASCE, January/February 43.

Gucinski, H, M. Furniss, R. Ziemer, M. Brookes. 2001. Forest roads: a synthesis of scientific information. U. S. Forest Service General Technical Report PNW-GTR-509.

Hasselbacha,T, J.M. Ver Hoef b, J. Fordc, P. Neitlicha, E. Creceliusd, S. Berrymane, B. Wolke, T. Bohlef. Spatial patterns of cadmium and lead deposition on and adjacent to National Park Service lands in the vicinity of Red Dog Mine, Alaska, Science of the Total Environment 348 (2005) 211–230).

Harris, Larry D. and P.B. Gallagher. New initiatives for wildlife conservation: the need for movement corridors. In Defense of Wildlife: Preserving Communities and Corridors. Washington, D.C.: Defenders of Wildlife, 1989.

Hilchey, T. 1993. A Forest Absorbs More Carbon Dioxide Than Was Predicted; New York Times

Jones, J. A., and G. E. Grant. 1996. Cumulative effects of forest harvest on peak streamflow in the western Cascades of Oregon. Water Resources Research 32:959-974.

Jones, J. A., F. J. Swanson, B. C. Wemple, and K. U. Snyder. 2000. Effects of roads on hydrology, geomorphology, and disturbance patches in stream networks. Conservation Biology 14:76-85.

King, J. G. and L. C. Tennyson. 1984. Alteration of streamflow characteristics following road construction in north central Idaho. Water Resources Research 20: 1159-1163

Mader, S. 2007. Climate Project: Carbon Sequestration and Storage by California Forests and Forest Products. Technical Memorandum prepared under contract to the California Forestry Association by CH2M HILL, Inc.

Malanson, GP. 1993. *Riparian Landscapes*. Cambridge, UK: Cambridge Univ. Press.

McCashion, J. D. and R. M. Rice. 1983. Erosion on logging roads in northwestern California: How much is avoidable? Journal of Forestry 81: 23-26.

Mitsch, William J. and J.G. Gosselink. Wetlands, second ed. New York: Van Nostrand Reinhold, 1993.

(National Research Council's 2001 report entitled Compensating for Wetland Losses under the Clean Water Act).

Newcombe, C. P., and J. O. T. Jensen. 1996. Channel suspended sediment and fisheries: a synthesis for quantitative assessment of risk. North American Journal of Fisheries Management 16:693-727.

Reid, L. M. and T. Dunne. 1984. Sediment production from forest road surfaces. Water Resources Research 20: 1753-1761.

Riejnen, Rien and Foppen, Ruud; Biodiversity and Conservation 6, 567-581 (1997) Disturbance by traffice of breeding birds: evaluation of the effect and considerations in planning and managing road corridors.

Saunders, S. C., M. R. Mislivets, J. Chen, and D. T. Cleland. 2002. Effects of roads on landscape structure within nested ecological units of the Northern Great Lakes Region, USA. Biological Conservation 103:209-225.

Swift Jr., L. W. 1984. Soil losses from roadbeds and cut and fill slopes in the Southern Appalachian Mountains. Southern Journal of Applied Forestry 8: 209-216.

Trombulak, S. C., and C. A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. Conservation Biology 14:18-30.

US Environmental Protection Agency. 1996. National water quality inventory of 1996. US EPA Washington, DC.

Wang, L., J. Lyons, and P. Kanehl. 2001. Impacts of urbanization on stream habitat and fish across multiple spatial scales. Environmental Management 28:244-266.

Wang, L., J. Lyons, and P. Kanehl. 2003. Impacts of urban land cover on trout streams in Wisconsin and Minnesota. Transactions of the American Fisheries Society 132:825-839.

Wemple, B. C., J. A. Jones and G. E. Grant. 1996. Channel network extension by logging roads in two basins, western Cascades, Oregon. Water Resources Bulletin 32: 1195-1207

Wheeler, A. P., P. A. Angermeier, and A. E. Rosenberger. 2005. Impacts of new highways and subsequent landscape urbanization on stream habitat and biota. Reviews in Fisheries Science 13:141-164.

Williams-Dery, 2007. Increases in greenhouse-gas emissions from highway-widening projects; Sightline Institute

Wilson, L.D. and L. Porras. 1983. The ecological impact of man on the South Florida Herpetofauna. Univ. KS. Specl. Publ. No. 9. Lawrence, KS.

Wilcove, D.S. 1988. National Forests: Policies for the Future. Vol. 2. Protecting Biological Diversity. The Wilderness Society, Washington, DC.

Van der Zande, ter Keurs, W.J. and Van der Weijden, W.J. et al. 1980. The impact of roads on the densities of four bird species in an open field habitat-evidence of a long distance effect. Biological Conservation 18: 299-321.